is desirable because of its capability of further reducing size and weight. For example, lever deflection detection is made possible by layering piezoelectric thin films on the lever.

IN THE CLAIMS:

Kindly amend claims 1-32 as follows:

1. (Amended) A near-field optical probe, comprising:

a cantilever having a first main surface and a second main surface opposite the first main surface;

a base supporting the cantilever at the first main surface;

a tip extending from the second main surface of the cantilever and having a microscopic aperture at an end thereof, the tip and the cantilever being formed of a transparent material having a high transmissivity relative to a wavelength of light generated or detected by the microscopic aperture; and

a shade film formed on the second main surface of the cantilever and on a surface of the tip except for the microscopic aperture.

2. (Amended) A near-field optical probe according to claim 1; wherein the transparent material of the tip is the same as the transparent material of the cantilever.

3. (Amended) A near-field optical probe according to claim 2; wherein the transparent material comprises silicon dioxide.

4. (Amended) A near-field optical probe according to claim 1; wherein the transparent material of the tip and the transparent material of the cantilever have different optical characteristics.

5. (Amended) A near-field optical probe according to claim 1; wherein the tip has a circular conical shape.

6. (Amended) A near-field optical probe according to claim 1; wherein the tip has a plurality of surfaces having different taper angles.

7. (Amended) A near-field optical probe according to claim 1; wherein the cantilever has a lens for focussing incident light to the microscopic aperture or for collimating light detected at the microscopic aperture.

8. (Amended) A near-field optical probe according to claim 7; wherein the lens comprises a Fresnel lens formed on a side of the base.

9. (Amended) A near-field optical probe according to claim 7; wherein the lens comprises a refractive-index distribution-type lens.

10. (Amended) A near-field optical probe according to claim 1; wherein an end of the tip is positioned nearly in a same plane as an end surface of the shade film.

11. (Amended) A near-field optical probe according to claim 1; wherein an end portion of the tip protrudes from an end face of the shade film in an amount equal to or smaller than a half of a wavelength of incident light focussed on the microscopic aperture and/or light detected at the microscopic aperture.

12. (Amended) A near-field optical probe comprising:

a cantilever having a first main surface and a second main surface opposite the first main surface, the cantilever being disposed at an inclination angle $\theta 1$ relative to a surface of a sample;

a base supporting the cantilever at the first main surface;

a tip having a height H and extending from the second main surface of the cantilever and having a microscopic aperture at an end thereof; and

A4 Cont'd

a shade film formed on the second main surface of the cantilever and on a surface of the tip except for the microscopic aperture;

wherein when a radius of a light spot on the cantilever resulting from light incident on the tip or light detected by the microscopic aperture and being incident on a detector is R1, a distance L1 from a center of the tip to a free end of the cantilever satisfies the equation $R1<L1<H/\tan \theta 1)$.

13. (Amended) A near-field optical probe according to claim 12; wherein an end of the cantilever has a slant portion extending from the first main surface to the second main surface.

14. (Amended) A near-field optical probe according to claim 12; wherein a side surface of the cantilever has a slant portion extending from the first main surface to the second main surface.

15. (Amended) A near-field optical probe according to claim 12; wherein the cantilever has a first portion having the first and second main surfaces, a second portion extending along a plane disposed generally parallel to the first main surface of the first portion, and a connecting portion extending in a direction opposite to the direction of

A4 Cont'd

extension of the tip and connecting the first portion to the second portion.

16. (Amended) A near-field optical probe according to claim 12; wherein the cantilever has a fixed end, a free end opposite to the free end, and a convex portion disposed closer to the free end than the fixed end.

17. (Amended) A near-field optical probe according to claim 16; wherein the convex portion is disposed on the second main surface of the cantilever at a position closer to the fixed end than to the tip; and wherein a height of the tip is greater than a height of the convex portion.

18. (Amended) A near-field optical probe according to claim 16; wherein the convex portion is disposed on the first main surface of the tip.

19. (Amended) A near-field optical apparatus comprising:

a near-field optical probe according to claim 1;

an introducing/detecting optical system having a lens for introducing light to the microscopic aperture of the near-field optical probe or detecting light from the microscopic aperture of the near-field optical probe;

A4 Cont'd

a detector for detecting a distance between the microscopic aperture of the near-field optical probe and a sample by an optical lever method, the detector having a mirror integral with the lens of the introducing/detecting optical system; and

a fine movement mechanism for finely moving the sample or the near-field optical probe.

20. (Amended) A near-field optical apparatus comprising:

a near-field optical probe according to claim 1;

an introducing/detecting optical system for introducing light to the microscopic aperture of the near-field optical probe or detecting light from the microscopic aperture of the near-field optical probe;

a detecting device for detecting a distance between the microscopic aperture of the near-field optical probe and a sample, the detecting device having a light source and an optical detector extending in a plane disposed generally perpendicular to the cantilever of the near-field optical probe; and

a fine movement mechanism for finely moving the sample or the near-field optical probe.

A4 Cont'd

21. (Amended) A near-field optical apparatus according to claim 20; wherein the optical detector detects light emitted from the light source and reflected by the cantilever.

22. (Amended) A near-field optical apparatus according to claim 20; wherein the optical detector detects light emitted from the light source and diffracted by the cantilever.

23. (Amended) A near-field optical apparatus comprising:

a near-field optical probe according to claim 1;

an introducing/detecting optical system for introducing light to the microscopic aperture of the near-field optical probe or detecting light from the microscopic aperture of the near-field optical probe;

a detector for detecting a distance between the microscopic aperture of the near-field optical probe and a sample and for detecting an interference between the cantilever of the near-field optical probe and an optical fiber disposed close to the cantilever; and

a fine movement mechanism for finely moving the sample or the near-field optical probe.

A4 Cont'd

24. (Amended) A near-field optical apparatus comprising:

a near-field optical probe according to claim 1;

an introducing/detecting optical system having a lens for introducing light to the microscopic aperture of the near-field optical probe or detecting light from the microscopic aperture of the near-field optical probe;

detecting means for detecting a displacement of the cantilever of the near-field optical probe and for detecting a distance between the microscopic aperture of the near-field optical probe and a sample; and

a fine movement mechanism for finely moving the sample or the near-field optical probe.

25. (Amended) A near-field optical apparatus comprising:

a near-field optical probe according to claim 1;

an introducing/detecting optical system having an optical fiber for introducing light to the microscopic aperture of the near-field optical probe or detecting light from the microscopic aperture of the near-field optical probe;

detecting means for detecting a distance between the microscopic aperture of the near-field optical probe and a sample; and

a fine movement mechanism for finely moving the sample or the near-field optical probe.

A4 Cont'd

26. (Amended) A method for manufacturing a near-field optical probe, comprising the steps of:

providing a transparent member on a first main surface of a substrate;

etching a part of the transparent member to form a tip;

forming a mask on the transparent member covering the tip and etching the transparent member using the mask to form a lever;

etching the substrate from a second main surface opposite to the first main surface to form a base; and

forming a shade film on the lever and on the tip except for an end portion of the tip.

27. (Amended) A method according to claim 26; wherein the step of etching to form the tip includes the step of forming a convex portion in the transparent member spaced from the tip.

28. (Amended) A method according to claim 26; wherein the steps of forming the mask and etching to form the lever include the step of forming a slant portion of the lever on an end portion or a side surface thereof.

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29. (Amended) A method according to claim 26; further comprising the step of forming a step portion on the

A4 Contd

substrate prior to providing the transparent member on the substrate; wherein in the step of etching to form the tip, the transparent member is etched in part to thereby form the tip in the vicinity of the step portion.

30. (Amended) A method according to claim 26; further comprising the steps of forming a step portion on the substrate prior to providing the transparent member on the substrate, and burying a weight material to be used as a weight portion in the step portion.

31. (Amended) A method according to claim 30; wherein the burying step comprises providing the weight material on the substrate to at least fill the step portion with the weight material, and removing part of the weight material so that a surface of the weight material provided in the step portion and a surface of the substrate are disposed in a single plane.

32. (Amended) A method for according to claim 31; wherein the step of removing the weight material comprises polishing the weight material.

Kindly add the following new claims 33-49:

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33. A near-field optical probe according to claim 1; wherein the tip is generally conical-shaped.

A5 Cont'd

34. A near-field optical probe according to claim 1; wherein the tip is generally pyramidal-shaped.

35. A near-field optical probe according to claim 6; wherein the tip is generally conical-shaped.

36. A near-field optical probe according to claim 6; wherein the tip is generally pyramidal-shaped.

37. A near-field optical probe according to claim 12; wherein the tip is generally conical-shaped.

38. A near-field optical probe according to claim 12; wherein the tip is generally pyramidal-shaped.

39. A near-field optical apparatus according to claim 19; wherein the tip of the near-field optical probe is generally conical-shaped.

40. A near-field optical apparatus according to claim 19; wherein the tip of the near-field optical probe is generally pyramidal-shaped.

41. A near-field optical apparatus according to claim 20; wherein the tip of the near-field optical probe is generally conical-shaped.

A5 Cont'd

42. A near-field optical apparatus according to claim 20; wherein the tip of the near-field optical probe is generally pyramidal-shaped.

43. A near-field optical apparatus according to claim 23; wherein the tip of the near-field optical probe is generally conical-shaped.

44. A near-field optical apparatus according to claim 23; wherein the tip of the near-field optical probe is generally pyramidal-shaped.

45. A near-field optical apparatus according to claim 24; wherein the tip of the near-field optical probe is generally conical-shaped.

46. A near-field optical apparatus according to claim 24; wherein the tip of the near-field optical probe is generally pyramidal-shaped.

47. A near-field optical apparatus according to claim 25; wherein the tip of the near-field optical probe is generally conical-shaped.

48. A near-field optical apparatus according to claim 25; wherein the tip of the near-field optical probe is generally pyramidal-shaped.